

**FEDERAL URDU UNIVERSITY
OF
SCIENCE & TECHNOLOGY**

Mid Term Exam***** Spring Semester 2014

Subject: Numerical Scientific Computation

Program: BSCS [6th-b (SS)]

Time Allowed: One & half Hour

Total Marks: 30

Attempt all five (05) Questions.

✓ Q1. Use Newton's method to approximate, upto four decimal places the root of

$$f(x) = x^3 - 3x - 3 \quad \text{with } x_0 = 2$$

⇒ 2.1038

✓ Q2. Use Secant method to approximate, upto three decimal places the root of

$$f(x) = x^3 - 9x + 1 \quad \text{with } x_0 = 3, x_1 = 4$$

⇒ 2.941

✓ Q3. Use method of false position, upto four decimal places the root of

$$f(x) = \sin x - 5x + 2 \quad \text{with } x_0 = 0.4, x_1 = 0.6$$

⇒ 0.4950

✓ Q4. Use Simpson's Rule to approximate the given integral.

$$\int_0^2 \frac{dx}{1+x^3} \quad n = 4$$

⇒ 0.8540

✓ Q5. Use Trapezoidal Rule to approximate the given integral.

$$\int_0^2 \frac{dx}{1+x^3} \quad n = 4$$

⇒ 0.8365

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